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# Audit Report



PROCUREMENT PRACTICES FOR THE COMPOSITE  
ARMORED VEHICLE AND COMPOSITE  
AFFORDABILITY INITIATIVE PROGRAMS

Report Number 00-019

October 26, 1999

Office of the Inspector General  
Department of Defense

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### **Acronyms**

CAI	Composite Affordability Initiative
CAV	Composite Armored Vehicle
JSF	Joint Strike Fighter
STI	Spectrum Textiles, Inc.
UDLP	United Defense Limited Partnership



INSPECTOR GENERAL  
DEPARTMENT OF DEFENSE  
400 ARMY NAVY DRIVE  
ARLINGTON, VIRGINIA 22202-2884

October 26, 1999

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE (ACQUISITION AND TECHNOLOGY)  
ASSISTANT SECRETARY OF THE NAVY (FINANCIAL MANAGEMENT AND COMPTROLLER)  
ASSISTANT SECRETARY OF THE AIR FORCE (FINANCIAL MANAGEMENT AND COMPTROLLER)  
DIRECTOR, DEFENSE LOGISTICS AGENCY  
AUDITOR GENERAL, DEPARTMENT OF THE ARMY  
DIRECTOR, JOINT STRIKE FIGHTER PROGRAM

SUBJECT: Audit Report on Procurement Practices for the Composite Armored Vehicle and Composite Affordability Initiative Programs  
(Report No. 00-019)

We are providing this report for your information and use. This audit was requested by the House Subcommittee on National Security, Veterans Affairs, and International Relations, Committee on Government Reform, and Congressman Ted Strickland to determine whether the DoD and its contractors violated procurement regulations. Because this report contains no findings or recommendations, no written comments were required, and none were received. Therefore, we are publishing this report in final form.

We appreciate the courtesies extended to the audit staff. For additional information on this report, please contact Mr. Joseph P. Doyle at (703) 604-9348 (DSN 664-9348) (jdoyle@dodig.osd.mil) or Ms. Deborah L. Culp at (703) 604-9335 (DSN 664-9335) (dculp@dodig.osd.mil). See Appendix B for the report distribution. The audit team members are listed inside the back cover.

*David K. Steensma*

David K. Steensma  
Deputy Assistant Inspector General  
for Auditing

## **Office of the Inspector General, DoD**

**Report No. 00-019**  
(Project No. 9CK-5043)

**October 26, 1999**

### **Procurement Practices for the Composite Armored Vehicle and Composite Affordability Initiative Programs**

#### **Executive Summary**

**Introduction.** This audit was requested by the House Subcommittee on National Security, Veterans Affairs, and International Relations, Committee on Government Reform, and Congressman Ted Strickland on behalf of a constituent to determine whether the DoD and its contractors violated procurement regulations.

**Objectives.** The audit objective was to determine whether violations of procurement regulations occurred regarding procurement of selected components of the Army Crusader vehicle and the Joint Strike Fighter aircraft. However, during the audit, we determined that the allegations involved the Army Composite Armored Vehicle and the Air Force Composite Affordability Initiative programs rather than the Crusader and Joint Strike Fighter programs. See Appendix A for a discussion of the scope and methodology and a summary of prior coverage related to the audit objectives.

**Results.** The allegations were not valid. The Army did not award a sole-source contract to Boeing Company for the Composite Armored Vehicle program. The Boeing Company did not realize a cost advantage on the Composite Armored Vehicle program because it will not be using a Government-owned machine. In addition, we did not find evidence that the Boeing Company unfairly excluded competition from the Composite Affordability Initiative program. Government and contractor personnel did not withhold Composite Armored Vehicle or Composite Affordability Initiative funding from Spectrum Textiles, Inc. in order to gain access to Spectrum's proprietary technology.

**Management Comments.** We provided a draft of this report on September 10, 1999. Because this draft report contains no findings or recommendations, written comments were not required, and none were received. Therefore, we are publishing this report in final form.

# Table of Contents

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<b>Executive Summary</b>	i
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## **Introduction**

Background	1
Objectives	2

## **Finding**

Compliance with Acquisition Procedures	3
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## **Appendixes**

A. Audit Process	
Scope and Methodology	6
Summary of Prior Coverage	7
B. Report Distribution	8

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## Background

The audit was requested by the House Subcommittee on National Security, Veterans Affairs, and International Relations, Committee on Government Reform and Congressman Ted Strickland, on behalf of Spectrum Textiles, Inc. (STI). STI alleged that the DoD and its contractors have violated procurement regulations in awarding contracts and subcontracts for stitching composite fabrics on the DoD Joint Strike Fighter (JSF) and the Army Crusader vehicle programs. However, during the audit, we determined that the allegations actually involved the Air Force Composite Affordability Initiative (CAI) and the Army Composite Armored Vehicle (CAV) programs.

**The CAI Program.** The CAI began in FY 1998 and involved the Air Force, Navy, the Boeing Company (Boeing) Seattle, Boeing St. Louis (formerly McDonnell Douglas Corporation), Lockheed Martin Corporation, and Northrop Grumman Corporation. The CAI is a research and development program that will not result in a production contract. The goal of the CAI is to find less costly ways to design and manufacture advanced composite structures and to therefore increase their use across manufacturing. The reduction in the cost of composites may lead to cost savings on the JSF, other DoD projects, and commercial applications. The CAI consists of ten tasks with Boeing as the team leader for the composite fabrication task.

The program used Other Transaction agreements for the acquisition rather than using more traditional contracting arrangements. The cost of the \$51 million project is shared between the Government and the aerospace companies. Other Transaction agreements are established under "Research projects: transactions other than contracts and grants," section 2371, title 10, United States Code, (10 U.S.C. 2371). When a standard contract, grant, or cooperative agreement is not feasible or appropriate for a research project, the Secretary of Defense or someone designated by the Secretary can enter into an agreement other than a contract, cooperative agreement, or grant. Other Transaction agreements are generally not required to comply with statutes or regulations that are applicable to contracts, grants, or cooperative agreements. Thus, the Federal Acquisition Regulations do not apply to Other Transaction agreements. There are no mandatory acquisition regulations for other transactions, other than the statutory requirements.

**The CAV Program.** A contract for Phase II of the Army CAV program was awarded to United Defense Limited Partnership (UDLP) San Jose in December 1993 and expires August 1999. The CAV program is a research program that will not result in a production contract. The goal of the CAV program is to demonstrate weight saving advantages of composites in combat vehicles. UDLP delivered a CAV demonstrator to the Army in 1997.

Some of the composite technology from the CAV program may be applied to the Crusader vehicles since the CAV program successfully demonstrated the use of composites in armored vehicles. In early FY 1999, the CAV program received

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manufacturing technology funds to address composite manufacturing issues. Stitching composite fabric is one of the techniques being researched under the manufacturing technology effort.

**The JSF and Crusader Programs.** Production contracts for the JSF and the Crusader have not been awarded. As of March 1999, the Lockheed Martin Corporation and Boeing are each building demonstrator versions of the JSF. A downselect decision for engineering and manufacturing development will be made in 2001. Production of the Crusader is not expected to begin until 2001.

## **Objectives**

The audit objective was to determine whether violations of procurement regulations occurred regarding procurement of selected components of the Army Crusader vehicle and the JSF aircraft. However, during the audit, we determined that the allegations involved the Army CAV and the Air Force CAI programs rather than the Crusader and JSF programs. See Appendix A for a discussion of the audit scope and methodology and a summary of prior coverage related to the audit objectives.

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## Compliance with Acquisition Procedures

This report addresses allegations that the DoD and certain prime contractors violated procurement regulations when awarding certain contracts and subcontracts for the CAV and CAI programs. Specifically, the report addresses:

- whether the Army awarded Boeing a sole source contract for work on the Crusader,
- whether Boeing had an unfair cost advantage by using a Government-purchased stitching machine for production work on the Crusader,
- whether Boeing was unfairly excluding competition for work on the JSF, and
- whether DoD and contractor personnel were using their position to withhold CAV and CAI funding from a potential contractor in order to gain access to proprietary technology.

We determined that DoD officials and its prime contractors did not violate procurement regulations when awarding certain contracts and subcontracts for the CAV and CAI programs, therefore, none of the allegations were valid.

## Allegations and Audit Results

**Allegation.** The Army awarded a sole source contract to Boeing for work on the Crusader program.

**Results.** The allegation was not valid. The Army did not award any contracts to Boeing for work to be performed on either the Crusader or the CAV programs. However, the Army awarded a contract to UDLP Minneapolis to build four prototype Crusaders and a contract to UDLP San Jose for work on the CAV program. UDLP San Jose did contact both STI and Boeing about stitching different test panels for the CAV program. As of May 25, 1999, UDLP San Jose had not awarded subcontracts to either STI or Boeing for stitching the test panels.

**Allegation.** Boeing would have an unfair cost advantage by using a Government-funded stitching machine for production work on the Crusader program.

**Results.** The allegation was not valid. The Crusader program is not in the production stage nor have any decisions been made as to what technology is to be used to manufacture any Crusader composite structures. Boeing does have a National Aeronautics and Space Administration-funded automated stitching machine, which is located at its Huntington Beach, California facility. Boeing

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has no plans to perform any work under CAV contract using this machine. A UDLP San Jose official indicated that Boeing's subcontract work under the CAV contract would be performed on a Boeing-owned single-head stitching machine located in Long Beach, California.

**Allegation.** Boeing is using its position on the CAI program to unfairly exclude competition from service work on the JSF program.

**Results.** The allegation was not valid. The CAI and JSF were two unrelated programs. STI was trying to get a subcontract from the CAI to stitch test panels. As one of the three aerospace companies involved in the CAI, Boeing is the team leader for the composite fabrication task, which includes the stitching technology. Boeing did not unfairly exclude competition from the CAI. Potential subcontractors for the CAI did not compete for work based on cost, but rather on which company offered the most promising technology that could be developed.

To solicit potential subcontractors for the CAI, an announcement was placed in the Commerce Business Daily for "white papers." The CAI subcontractors were selected by the CAI Task Leaders based on the "white papers" submitted. Even though STI submitted their "white paper" 6 months late, they were still considered as a potential subcontractor of the CAI program.

Boeing asked STI to submit a quote for stitching test panels. STI's quote contained conditions that did not allow for information and technology sharing, which is one of the goals of the CAI. In addition, Boeing officials could not evaluate STI because of STI's refusal to allow Boeing access to STI's facilities to evaluate its technical and production capabilities. Therefore, a Boeing official made the decision to not subcontract with STI.

The DoD could not have violated procurement regulations on the four Other Transactions for the CAI program because the procurement regulations and most acquisition statutes under title 10 do not apply. Currently, no regulations, DoD Directives, or DoD Instructions apply to Other Transactions. The Air Force has to follow the requirements under 10 U.S.C. 2371 on Other Transactions.

**Allegation.** DoD and contractor personnel are using their positions to withhold funding in order to gain access to the constituent's proprietary technology.

**Results.** The allegation was not valid. Evidence was not found that DoD or its contractor personnel withheld funds from STI. Since STI was not a prime contractor of the DoD, and would not disclose the names of its commercial customers, it was difficult for the DoD or its contractors to assess STI's stitching and production capabilities. STI constantly refused access to, or disclosure of, their production facilities locations. However, in an October 19, 1998, letter to Boeing, STI offered to let Boeing see their machinery for a price. Boeing responded that it was not interested in purchasing the right to visit STI. Boeing and UDLP officials offered to sign agreements that would protect STI proprietary manufacturing processes but STI refused to discuss this option.

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As of May 25, 1999, UDLP San Jose was still attempting to subcontract with STI on the CAV program, but STI's refusal to sign the Federal Acquisition Regulation mandated Equal Employment Opportunity Certificate prevented UDLP from awarding a subcontract to STI. Boeing has not awarded a subcontract to STI under the CAI because Boeing was unable to assess STI's capabilities, which is Boeing's normal business practice when dealing with potential suppliers.

## Summary

The Army did not award any contracts to Boeing for stitching composite fabrics on either the CAV or Crusader programs. Further, no decisions have been made as to whether stitched composite fabrics will be used for Crusader production. The Army awarded a contract to UDLP Minneapolis to build prototype Crusaders and a contract to UDLP San Jose for work on the CAV program. UDLP San Jose contacted both Boeing and STI about stitching test panels under the CAV program.

Boeing does not intend to use the National Aeronautics and Space Administration-funded stitching machine to produce the test panels under the CAV program. A Boeing-owned stitching machine will be used to make the panels.

Boeing did not unfairly exclude competition from the CAI. Boeing decided not to contract with STI under the CAI because of the restrictive conditions contained in STI's quote. Further, the DoD and Boeing could not have violated procurement regulations and most acquisition statutes in title 10 because Other Transaction agreements were signed and the procurement regulations do not apply to this type of transaction.

Finally, evidence was not found that the DoD and its contractor personnel withheld funds from STI in order to gain access to STI's proprietary technology. The Government and contractor personnel acted properly in their award of subcontracts on the CAI and CAV programs.

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## Appendix A. Audit Process

### Scope and Methodology

**Work Performed.** We evaluated the CAI Other Transaction agreements, F33615-98-3-5103, F33615-98-3-5104, F33615-98-1-5105, and F33636-98-3-5106, which began in December 1997 and expire in about 3 years. The CAI has an estimated cost of \$51 million. We also evaluated the CAV contract, DAAE07-94-C-R011, which began in December 1993 and expires August 1999. The estimated cost of the CAV contract is \$54 million.

We reviewed the actions taken by the Government and prime contractor personnel for the procurement actions mentioned in the allegations. Our review covered the period October 1997 through May 1999. We interviewed Government personnel at the Army Tank-Automotive Research, Development and Engineering Center in Warren, Michigan, and the Air Force Research Laboratory at Wright Patterson Air Force Base, Ohio. We interviewed contractor personnel at UDLP in San Jose, California and Boeing in Seattle, Washington. In addition, we reviewed the UDLP and Boeing small business subcontracting plans and experience for FYs 1998 and 1999 through May 1999.

**Limitations to Scope.** We did not evaluate the management control program nor review computer-processed data because of the specific nature of the audit request.

#### **DoD-Wide Corporate Level Government Performance and Results Act**

**Goals.** In response to the Government Performance Results Act, the Department of Defense has established 2 DoD-wide corporate level performance objectives and 7 subordinate performance goals. This report pertains to achievement of the following goals (and subordinate performance goals):

**Goal 2:** Prepare now for an uncertain future by pursuing a focused modernization effort that maintains U.S. qualitative superiority in key warfighting capabilities. Transform the force by exploiting the Revolution in Military Affairs, and reengineer the Department to achieve a 21st century infrastructure. (00-DoD-2.0)

**General Accounting Office High-Risk Area.** The General Accounting Office has identified several high-risk areas in the DoD. This report provides coverage of the Defense Contract Management high-risk area.

**Audit Type, Dates, and Standards.** We performed this economy and efficiency audit from March 1999 through August 1999 in accordance with auditing standards issued by the Comptroller General of the United States, as implemented by the Inspector General, DoD.

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**Contacts During the Audit.** We visited or contacted individuals and organizations within the DoD, Boeing in Seattle, Washington and UDLP in San Jose, California. Further details are available on request.

## **Summary of Prior Coverage**

No prior coverage has been conducted on the subject during the last 5 years.

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## **Appendix B. Report Distribution**

### **Office of the Secretary of Defense**

Under Secretary of Defense (Acquisition and Technology)  
    Director, Defense Logistics Studies Information Exchange  
Under Secretary of Defense (Comptroller)  
    Deputy Chief Financial Officer  
    Deputy Comptroller (Program/Budget)

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Commander, U.S. Army Materiel Command  
    Commander, TACOM Research, Development and Engineering Center

### **Department of the Navy**

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Assistant Secretary of the Navy (Research, Development and Acquisition)  
Auditor General, Department of the Navy  
Director, Joint Strike Fighter Program

### **Department of the Air Force**

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Auditor General, Department of the Air Force  
Commander, Air Force Research Laboratory

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Director, Defense Contract Audit Agency  
Director, Defense Logistics Agency  
    Director, Defense Contract Management Command  
        Commander, Defense Contract Management District - West  
Director, National Security Agency  
    Inspector General, National Security Agency  
Inspector General, Defense Intelligence Agency

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Technical Information Center

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Senate Committee on Armed Services  
Senate Committee on Governmental Affairs  
House Committee on Appropriations  
House Subcommittee on Defense, Committee on Appropriations  
House Committee on Armed Services  
House Committee on Government Reform  
House Subcommittee on Government Management, Information, and Technology,  
Committee on Government Reform  
House Subcommittee on National Security, Veterans Affairs, and International  
Relations, Committee on Government Reform

Honorable Ted Strickland, U.S. House of Representatives

## **Audit Team Members**

The Contract Management Directorate, Office of the Assistant Inspector General for Auditing, DoD, prepared this report.

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